



MYOCARDIAL ISCHEMIA AND INFARCTION

SERIAL MEASUREMENT OF UNBOUND FREE FATTY ACIDS ADDS TO HIGHLY SENSITIVE TROPONIN I IN THE DIAGNOSTIC EVALUATION OF CHEST PAIN

ACC Poster Contributions

Ernest N. Morial Convention Center, Hall F

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Session Title: Unstable Ischemic Syndrome -- Clinical: Novel Markers and Therapies

Abstract Category: 2. Unstable Ischemic Syndrome--Clinical

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Background: Measurement of unbound free fatty acid (FFAu) may be valuable for diagnosis or exclusion of acute coronary syndrome (ACS). We sought to determine the value of serial FFAu measurement relative to highly sensitive troponin I (hsTnI) for ACS evaluation.

Methods: Patients presenting to the emergency department with symptoms suggestive of ACS had hsTnI (Singulex, Inc) and FFAu levels (FFA Sciences) measured at baseline and 2-4 hrs after presentation. hsTnI was considered elevated if above the 99th percentile value (6.28 pg/mL), while FFAu results were generated from a composite of 7 different probes. Area under the curve (AUC), net reclassification index (NRI) and integrated discrimination improvement (IDI) analyses were applied. ACS was judged using standard criteria.

Results: 180 patients were studied; 34 (19%) had a final diagnosis of ACS. At baseline hsTnI had sensitivity of 59%, specificity of 90%, positive predictive value (PPV) of 59% and negative predictive value (NPV) of 90%. At 2-4 hours, hsTnI had 59% sensitivity, 87% specificity, 51% PPV and 90% NPV. Baseline FFAu had 71% sensitivity, 73% specificity, 38% PPV and 91% NPV; at 2-4 hours FFAu had 53% sensitivity, 71% specificity, 35% PPV and 88% NPV. AUC, IDI and NRI analyses are detail in the table. An hsTnI at 2-4 hours added minimally to baseline, while FFAu added diagnostic information to hsTnI at baseline and 2-4 hours.

Conclusions: Measurement of FFAu at presentation and at 2-4 hours adds to the diagnostic accuracy of hsTnI for detection of ACS.

Comparison	AUC marker 1	AUC marker 1+ marker 2	Change in AUC	P value, AUC change	Relative IDI	P value, IDI	Relative NRI	P value, NRI
Baseline hsTnI plus 2-4 hour hsTnI	0.746	0.753	0.007	.04	.71%	.26	3.4%	.03
Baseline FFAu plus 2-4 hour FFAu	0.716	0.760	0.04	.06	11%	.35	79%	<.0001
Baseline hsTnI plus baseline FFAu	0.746	0.839	0.09	.001	31%	.006	49%	.002
2-4 hour hsTnI plus 2-4 hour FFAu	0.729	0.800	.071	.01	21%	.06	35%	.03